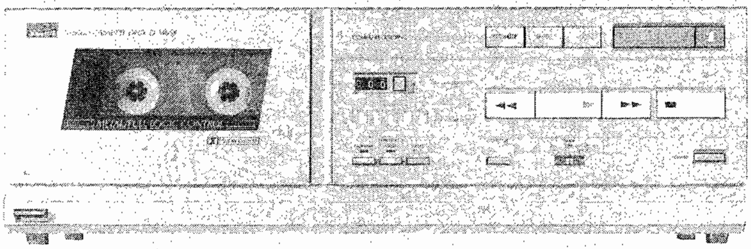
82

SERVICE MANUAL

STEREO CASSETTE DECK

SANSUI D-M55F



CAUTION

1. Use only replacement parts recommended by the manufacturer.
2. Measure insulation resistance before returning the appliance to the customer to prevent electrical shock.

Sansui

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

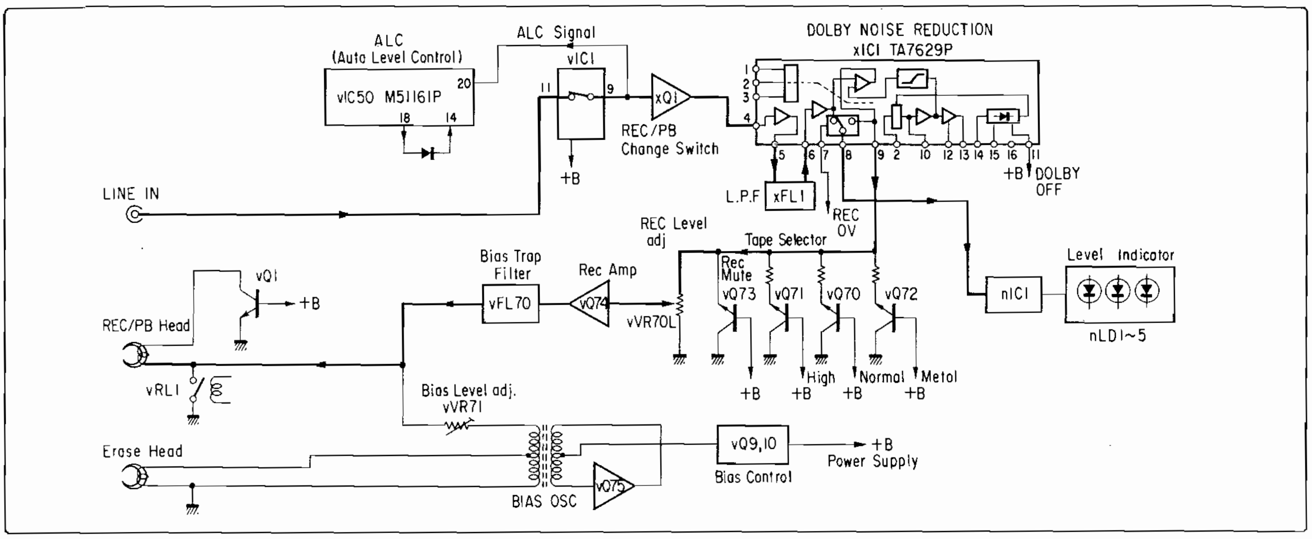
Track format	4-track/2-channel system
Tape speed	4.8 cm/sec.
Heads (2-head configuration)	
Rec/pb head	HIGH-Bs hard permalloy
Erase head	Double-grap HIGH-Bs ferrite
Motor	Electronically controlled DC motor Reels: DC Motor
Wow/flutter	0.05% max (WRMS)
Fast forwarding (rewinding) time	Approx. 85 sec. (for C-60 tape)
Frequency response (−20 VU recording/playback)	
Normal Tape (LH)	20 to 15,000 Hz (30 to 14,000 Hz ±3 dB)
Chrome tape	20 to 16,000 Hz (30 to 15,000 Hz ±3 dB)
Metal tape	20 to 16,000 Hz (30 to 15,000 Hz ±3 dB)
Signal-to-noise ratio (recording/playback with metal tape)	
DOLBY NR OFF	Better than 58 dB
DOLBY NR ON	Better than 68 dB (5 kHz)
Erasure rate (metal tape)	70 dB min (1 kHz)
Recording bias frequency	85 kHz
Input sensitivity/impedance	
LINE IN (REC)	150 mV/47 kohms
Power requirements	120/220/240 V 50/60 Hz
For U.S.A. and Canada	120V (60 Hz)
Power consumption	14W
Dimensions	345 mm (13-5/8") W 111 mm (4-3/8") H 227 mm (8-5/16") D
Weight	3.0 kg (6.6 lbs) net 3.7 kg (8.2 lbs) packed

- * **Design and specifications subject to changes without notice for improvements.**
- * **Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double D symbol are trade marks of Dolby Laboratories Licensing Corporation.**

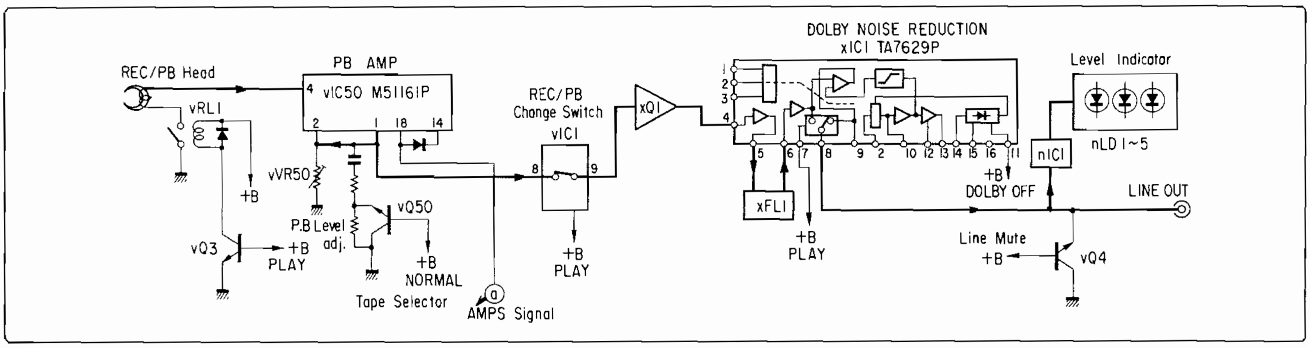
8a

1. BLOCK DIAGRAM

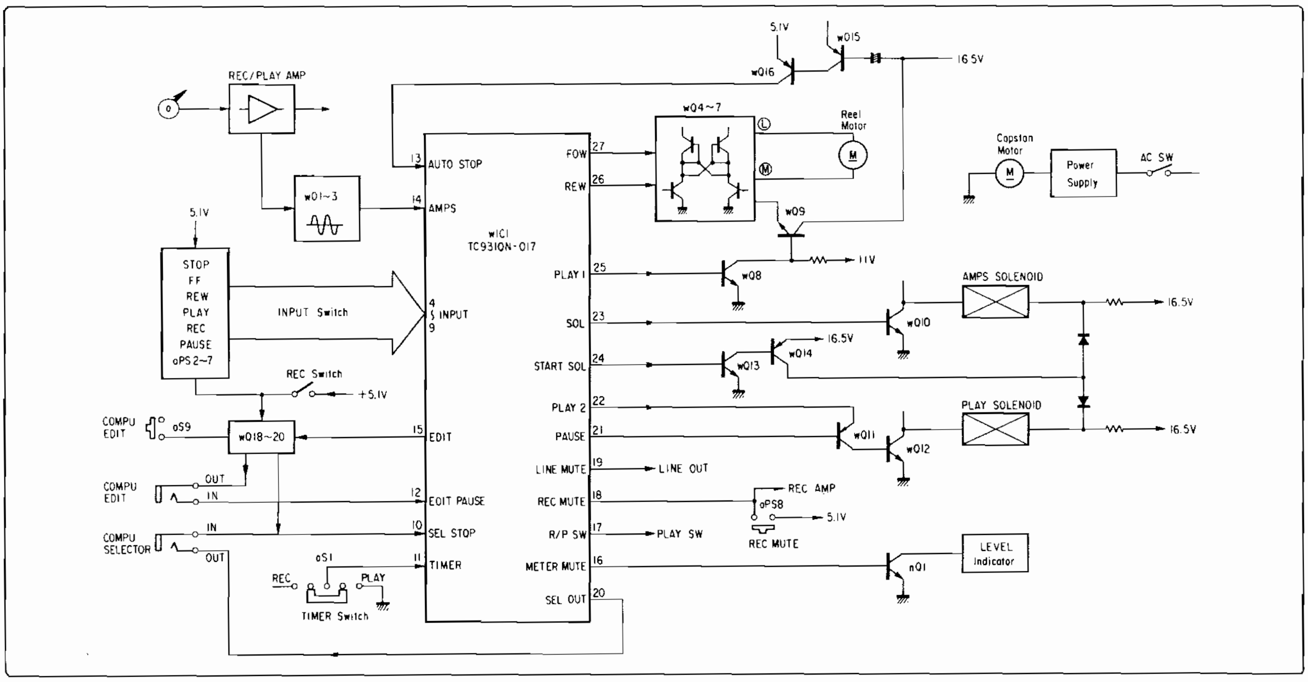
1-1. REC Operation <L-ch>


ALC
(Auto Level Control)
vIC50 M51161P
20
18
14
ALC Signal
vIC1
11
9
+B
xQ1
REC/PB
Change Switch
DOLBY NOISE REDUCTION
xIC1 TA7629P
1
2
3
4
5
6
7
8
9
2
10
12
13
14
15
16
11
+B
DOLBY
OFF
LINE IN
L.P.F
xFL1
REC
OV
REC Level
adj
Tape Selector
Rec
Mute
vQ73
vQ71
vQ70
vQ72
High
Normal
Metal
+B
+B
+B
+B
vVR70L
Rec Amp
vQ74
Bias Trap
Filter
vFL70
vQ1
+B
REC/PB Head
vRL1
Bias Level adj.
vVR71
Erase Head
BIAS OSC
vQ75
vQ9,10
Bias Control
+B
Power Supply
nIC1
Level Indicator
nLD1~5

1-2. PLAY Operation <L-ch>


REC/PB Head
vRL1
+B
vQ3
+B
PLAY
PB AMP
vIC50 M51161P
4
2
1
18
14
vVR50
P.B Level
adj.
vQ50
+B
NORMAL
Tape Selector
AMPS Signal
REC/PB
Change Switch
vIC1
8
9
+B
PLAY
xQ1
DOLBY NOISE REDUCTION
xIC1 TA7629P
1
2
3
4
5
6
7
8
9
2
10
12
13
14
15
16
11
xFL1
+B
PLAY
+B
DOLBY OFF
nIC1
Level Indicator
nLD1~5
LINE OUT
Line Mute
+B
vQ4

1-3. Mechanism Logic Control Section


REC/PLAY AMP
wQ1~3
5.1V
STOP
FF
REW
PLAY
REC
PAUSE
oPS2~7
INPUT Switch
REC Switch
+5.1V
COMPU
EDIT
oS9
wQ18~20
COMPU
EDIT
OUT
IN
COMPU
SELECTOR
IN
OUT
oS1
REC
PLAY
TIMER Switch
wIC1
TC9310N-017
13 AUTO STOP
14 AMPS
4
5 INPUT
9
15 EDIT
12 EDIT PAUSE
10 SEL STOP
11 TIMER
FOW 27
REW 26
PLAY 1 25
SOL 23
START SOL 24
PLAY 2 22
PAUSE 21
LINE MUTE 19
REC MUTE 18
R/P SW 17
METER MUTE 16
SEL OUT 20
5.1V
wQ15
wQ16
16.5V
wQ4~7
Ⓛ
Ⓜ
Reel
Motor
M
wQ9
11V
wQ8
Capstan
Motor
M
Power
Supply
AC SW
AMPS SOLENOID
16.5V
wQ10
16.5V
wQ14
wQ13
PLAY SOLENOID
16.5V
wQ11
wQ12
LINE OUT
REC AMP
oPS8
5.1V
REC MUTE
PLAY SW
LEVEL
Indicator
nQ1

2. INTERNAL BLOCK DIAGRAM OF IC & INPUT/OUTPUT TERMINAL FUNCTIONS

• INPUT/OUTPUT Terminal Functions of IC TC9310N-017 (WIC1)

OUTPUT PORT OF wIC1			FWD	REW	PLAY	START SOL	SOL	PLAY	PAUSE	SEL OUT	LINE MUTE	REC MUTE	R/P SW	METER MUTE	EDIT
INPUT PORT		PIN	27	26	25	24	23	22	21	20	19	18	17	16	15
STOP		4									○	○			
FF		5	○			○	○				○	○			
REW		6		○		○	○				○	○			
PLAY		7	○		○	○		○		○		○		○	
REC		8	○		○	○		○			○		○	○	
PAUSE		9							○		○	○			
SEL STOP		10	STOP mode at PLAY and PLAY PAUSE operation, EDIT is rereased only at EDIT REC PAUSE or EDIT REC.												
TIMER		11	The mode become REC 3 sec after power switch on when oS1 set REC(H) position, The mode become PLAY after power switch on when oS1 set PLAY(L) position.												
EDIT PAUSE	H	12	○		○	○		○			○		○	○	○
EDIT PAUSE	L	12	Turn H from L after 2 sec.												
AUTO STOP		13	Becomes STOP mode after 1 sec.												
AMPS		14	When this port changes to L level during AMPS operation, the mode changes to PLAY mode through STOP mode.												
EDIT		15						○	○		○	○	○	○	○
AMPS FF			○			○	○	○			○	○			
AMPS REW				○		○	○	○			○	○			

for 100msec　　for 300msec

● Note : 1. This table shows state of output when one input ports is depressed, ○ mark means H level output.
2. Pin No. 11 and 12 are three-state input ports.
3. Pin No. 15 is I/O(INPUT/OUTPUT) port.

• Mode Operation of IC TC9310N-017 (WIC1)

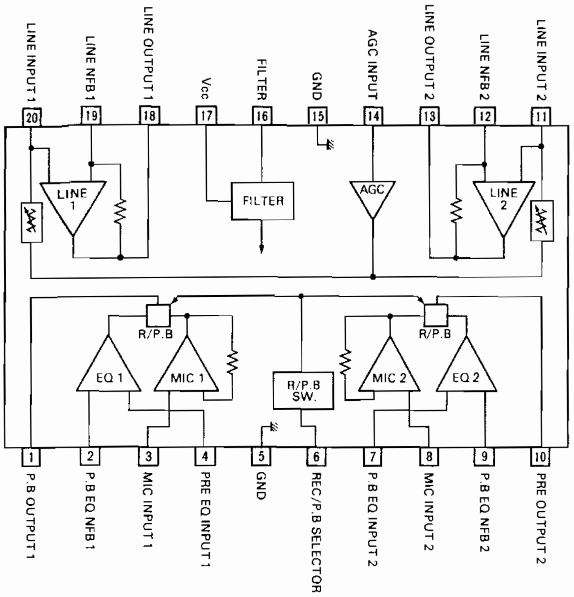
INPUT KEY / PRESENT MODE	STOP	FF	REW	PLAY	REC PLAY	PAUSE	EDIT PAUSE		EDIT	SEL STOP	AMPS		A-STOP	TIMER START		
	(■)	(▶▶)	(◀◀)	(▶)	(●▶)	(❚❚)	H	L			L	H→L		VDD	OPEN	GND
STOP (■)	—	▶▶	◀◀	▶	●▶	❚❚	—	—	EDIT ●▶❚❚	—	—	—	☒	☒	☒	☒
FF (▶▶)	■	—	◀◀	▶	—	—	—	—	—	—	—	—	■Mode, 1sec after	☒	☒	☒
REW (◀◀)	■	▶▶	—	▶	—	—	—	—	—	—	—	—	■Mode, 1sec after	☒	☒	☒
PLAY (▶)	■	Que	Review	—	—	▶❚❚	—	—	—	■	—	—	■Mode, 1sec after	☒	☒	☒
REC PLAY (●▶)	■	▶▶	◀◀	—	—	●▶❚❚	—	—	—	—	—	—	■Mode, 1sec after	☒	☒	☒
PAUSE (❚❚)	■	▶▶	◀◀	▶❚❚	●▶❚❚	■	—	—	—	—	—	—	☒	☒	☒	☒
▶❚❚	■	▶▶	◀◀	—	—	▶	—	—	—	■	—	—	☒	☒	☒	☒
●▶❚❚	■	▶▶	◀◀	—	—	●▶	—	—	—	—	—	—	☒	☒	☒	☒
EDIT ●▶❚❚	■	▶▶	◀◀	—	—	EDIT ●▶	EDIT ●▶	—	—	●▶❚❚	—	—	☒	☒	☒	☒
EDIT ●▶	■	▶▶	◀◀	—	—	EDIT ●▶❚❚	—	●▶❚❚Mode, 2sec after	—	●▶	—	—	■Mode, 1sec after	☒	☒	☒
AMPS FF	■	—	Review	▶	—	—	—	—	—	—	—	▶	■Mode, 1sec after	☒	☒	☒
AMPS REW	■	Que	—	▶	—	—	—	—	—	—	—	▶	■Mode, 1sec after	☒	☒	☒
POWER SW ON														●▶Mode, 3sec after	■	▶Mode, 3sec after

● Note : 1. This table shows operation when one input key is depressed on present mode.
2. Que is in the state of PLAY mode under FF operation.
Review is in the state of PLAY mode under REW operation.

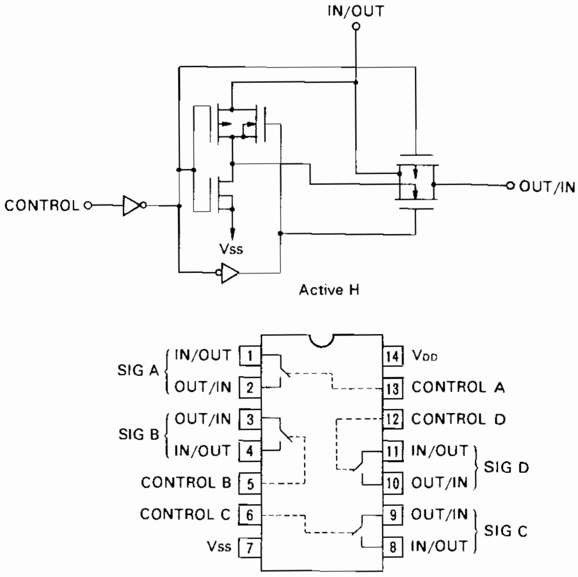
[—] mark means continuing present mode.

☒ mark means non relation with other input ports.

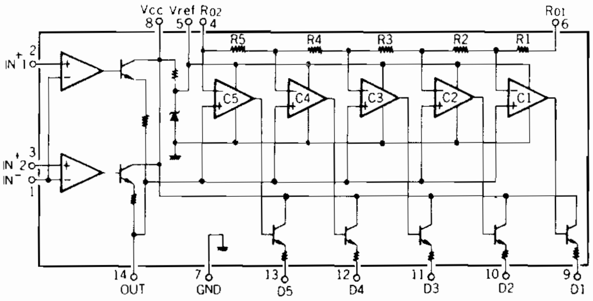
- **M51161P (MIC Amp & PLAY EQ Amp)**


LINE INPUT 1
LINE NFB 1
LINE OUTPUT 1
Vcc
FILTER
GND
AGC INPUT
LINE OUTPUT 2
LINE NFB 2
LINE INPUT 2
20
19
18
17
16
15
14
13
12
11
LINE 1
FILTER
AGC
LINE 2
R/P.B
R/P.B
EQ 1
MIC 1
R/P.B SW.
MIC 2
EQ 2
1
2
3
4
5
6
7
8
9
10
P.B OUTPUT 1
P.B EQ NFB 1
MIC INPUT 1
PRE EQ INPUT 1
GND
REC/P.B SELECTOR
P.B EQ INPUT 2
MIC INPUT 2
P.B EQ NFB 2
PRE OUTPUT 2

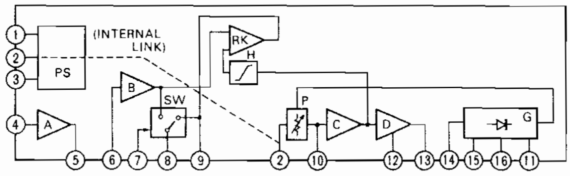
- **MSM4066RS (Analog Switch)**


IN/OUT
CONTROL
OUT/IN
Vss
Active H
SIG A
IN/OUT 1
OUT/IN 2
SIG B
OUT/IN 3
IN/OUT 4
CONTROL B 5
CONTROL C 6
Vss 7
14 VDD
13 CONTROL A
12 CONTROL D
11 IN/OUT
10 OUT/IN
SIG D
9 OUT/IN
8 IN/OUT
SIG C

- **LB-1416 (Signal Indicator Drive)**


Vcc Vref R02
8 5 4
R01
6
R5
R4
R3
R2
R1
C5
C4
C3
C2
C1
IN+ 2
IN 1
IN+ 3
IN 2
IN− 1
14 OUT
7 GND
13 D5
12 D4
11 D3
10 D2
9 D1

- **TA7629P (B Type Dolby Noise Reduction)**


1
2
3
4
(INTERNAL LINK)
PS
RK
H
B
SW
A
P
C
D
G
5
6
7
8
9
2
10
12
13
14
15
16
11

3. ADJUSTMENTS

3-1 Tape Speed Adjustment

Note: 1. Use Sansui Test Tape, SCT-S3K (3 kHz signals are recorded on the tape).
2. Connections are shown in Fig. 3-1.

Fig. 3-1

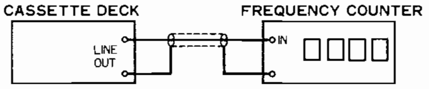
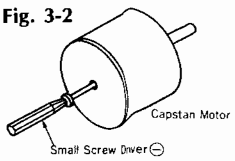


Fig. 3-2



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	TAPE SPEED Adj.	LINE OUT Frequency counter	Playback the TEST TAPE SCT-S3K.	Turn semi-variable resistor as Fig. 3-2.	3000 Hz ± 1.5%	Use small screw driver.

3-2. Playback Adjustment

Note: 1. Before this adjustment, clean REC/P.B. head surface.
2. For this adjustment, use Sansui Test Tape, SCT-F10KN, SCT-L400N and SCT-F1K.
3. Set the Dolby NR switch to be OFF.
4. Connections are shown in Fig. 3-3.
5. Remove the cassette lid. (Fig. 3-7)

Fig. 3-3

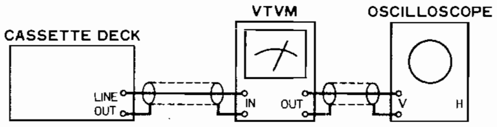
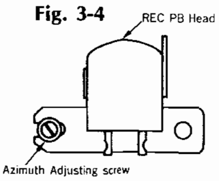


Fig. 3-4



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT VTVM, Scope	Playback the TEST TAPE-SCT-F10K	Adjust the azimuth adjusting screw in Fig. 3-4.	MAX. Output on both channels.	Refer to removement of Lid Ass'y on Page 5. After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	Same as above	Set TAPE SELECTOR to NORMAL position. Playback the TEST TAPE SCT-L400	Adjust each vVR50 on L-CH and R-CH.	320mV ± 2dB	See Top View on page 10.
3.	High Frequency Equalization Check	Same as above	Set TAPE SELECTOR to NORMAL position. Playback the TEST TAPE SCT-F1K.	———	———	Read output levels on both channels.
			Playback the TEST TAPE SCT-F10K	———	———	Confirm that the output levels are within ± 4dB comparing with the above readings.

Note: On STEP 3, set the TAPE SELECTOR to HIGH position during playback of SCT-10KN, and confirm the indication on VTVM drops approximately 5dB.

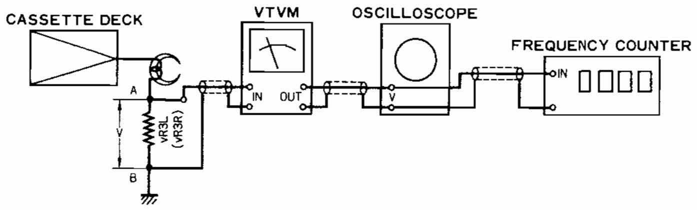
3-3. Recording Adjustment

1) Bias Adjustment

* This adjustment is require, when replacing bias osc circuit, variable resistor for bias adjustment or REC/PB head.

Note: 1. For this adjustment, use Sansui Test Tape, SCT-SA.
2. Set the Dolby NR Switch to be OFF.
3. Connections are shown in Fig. 3-5.

Fig. 3-5

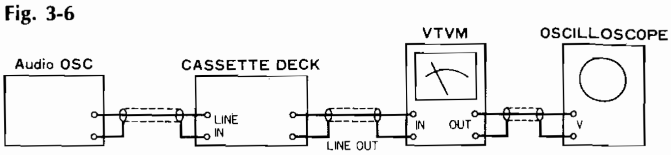


STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Recording Bias Adj.	Between vR3L & vR3R VTVM, Scope, Frequency Counter	Load the TEST TAPE SCT-SA. Depress PAUSE and REC buttons. Set TAPE SELECTOR to HIGH position.	Adjust vVR71L for L-CH and vVR71R for R-CH.	7.0mV	See Top View on page 10.
			Set TAPE SELECTOR to NORMAL position.	———	———	Confirm the indication on VTVM shows 6.0mV.
			Set TAPE SELECTOR to METAL position.	———	———	Confirm the indication on VTVM shows 10.0mV.

2) REC Level & Frequency Response Adjustment

Note: 1. Connections are shown in Fig. 3-6.
2. Set the Dolby NR switch to be OFF.
3. Use Sansui Test Tape, SCT-SA.

Fig. 3-6



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1 kHz, 15mV from S.G. into LINE IN.	LINE OUT, VTVM and Scope	Load the TEST TAPE SCT-SA and set TAPE SELECTOR to HIGH. 1. Depress PAUSE and REC button. 2. Push off the PAUSE button, then record the 1kHz signal. 3. Play back the 1kHz signal. 4. Confirm that the output levels on both channels are 22.5mV on VTVM.	1. If not 22.5mV, turn vVR70 (REC, L-CH) and vVR70 (REC, R-CH) until output level 22.5mV on both channels are obtained.	vVR70 (REC, L-CH), and vVR70 (REC, R-CH) are shown in Top View on page 10.
2.	Frequency Response Adj.	Feed 1kHz 15mV and 10kHz 15mV from S.G. into LINE IN.	Same as above	Load the TEST TAPE SCT-SA and set TAPE SELECTOR to HIGH. 1. Record the 1kHz and 10kHz signals from S.G. 2. Play back the 1kHz and 10kHz signals, then confirm 10kHz signal level in less than 1kHz signal level ± 3dB on VTVM.	1. If not, adjust vVR71L for L-CH and vVR71R for R-CH slightly until the output levels the 10kHz signal level in less than 1kHz signal level ± 3dB on VTVM	As vVR71L and vVR71R are previously adjusted, turn them slightly, if necessary.

◆ List of Sansui Test Tape

Name of TEST TAPE	Recorded Frequency	Description	Equivalent To
SCT-F40	40 Hz	Playback Frequency Response Check	—
SCT-F1K	1 kHz	High Frequency Equalization Check	—
SCT-F10K	10 kHz	REC/PB Head Adjustment	—
SCT-L400N	400 Hz	Playback Level and Indicator Level Adjustment	—
SCT-S3K	3 kHz	Speed Check and Wow & Flutter Check	—
*SCT-AD NORMAL	—	Recording Bias Adjustment	TDK AD
*SCT-SA HIGH	—	REC/PB Level Adjustment	TDK SA
*SCT-MA (METAL)	—	Frequency Response Check	TDK MA

•Note: Some reference tapes marked * are not supplied.
As these are equivalent to ones indicated above, please obtain these blank tapes on your side as possible.

◆ TAPE SELECTOR Position

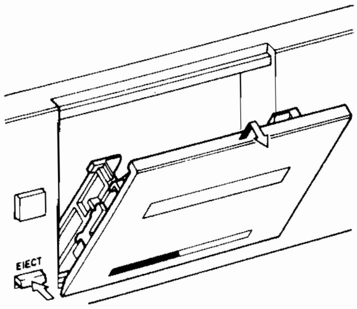
NORMAL	
FUJI	FL, FXI
MAXELL	UL, UD, XL I, XL I-S
TDK	D, AD, OD
SCOTCH	TARTAN CRYSTAL MASTER 120
SONY	AHF, BHF, CHF Low-Noise
AGFA	SUPER SUPER COLOR SUPER FERRO DYNAMIC
BASF	LN Super LH I

HIGH	
FUJI	FX II
MAXELL	XL II, XL II-S
TDK	SA, SA-X
SCOTCH	MASTER 70
SONY	JHF
AGFA	STEREO CHROM
BASF	SCR
METAL	
MAXELL	MX
TDK	MA-R, MA
SCOTCH	Metafine
SONY	METALLIC

◆ Removement and Attachment of Lid Ass'y

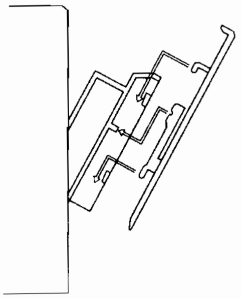
Depress the EJECT button to open the cassette well ass'y, and pull the Lid up and then toward you to remove it as shown in the figure.

Fig. 3-7



Re-attach the Lid to the cassette holder as shown in the figure.

Fig. 3-8

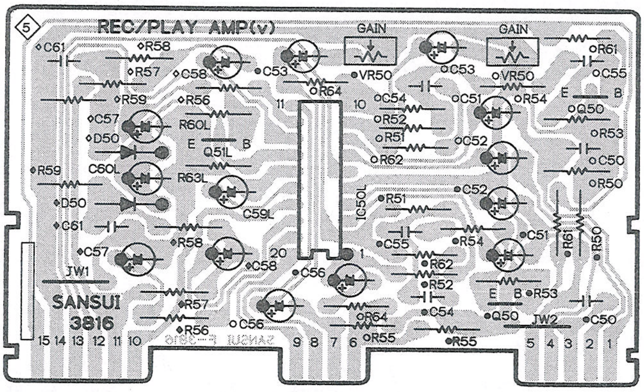


4. PARTS LOCATION & PARTS LIST

•Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

4-1. F-3816 MIC & PLAY Amp. Circuit Board (Stock No. 00733101)

Component Side


REC/PLAY AMP(v)
GAIN
GAIN
VR50
C61
R58
R57
C58
C53
R64
R61
C55
R59
R56
C54
C51
R54
Q50
C57
D50
R60L
Q51L
R52
R51
C52
R53
C50
R59
C60L
R63L
R62
IC50L
R50
D50
C59L
R51
C61
C57
R58
C58
C56
C55
R54
R62
R52
R53
JW1
SANSUI
3816
R57
R56
C56
R64
C54
Q50
JW2
C50
R55
R55
15 14 13 12 11 10
9 8 7 6
5 4 3 2 1

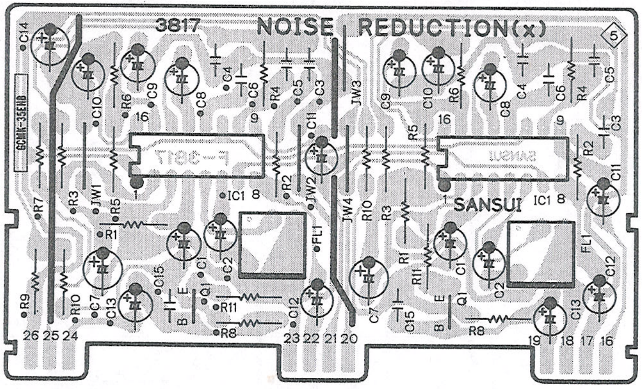
•Note: On this circuit board, the left channel is specified by "●, ◆" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ50	46367101	2SC2603
	or 46391901	2SC2785
vQ51	46367101	2SC2603
	or 46391901	2SC2785
•IC		
vIC50	46362100	M51161P
•Diode		
vD50	03117600	1S2473D
	or 46086000	1S1588
vC50	07215000	2200pF 25V C.C.
vC54	07216300	27000pF 25V C.C.
vC55	07216200	22000pF 25V C.C.
vC61	07216300	27000pF 25V C.C.
vVR50	07261500	500Ω(B) SVR, P.B. level adj.

4-2. F-3817 Noise Reduction Circuit Board (Stock No. 00727601)

Component Side


3817
NOISE REDUCTION(x)
C14
C10
R6
C9
C8
C4
C6
R4
C5
C3
C11
JW3
R2
16
9
IC1 8
R7
R3
JW1
R5
R1
JW2
JW4
R10
R3
R5
R1
R11
FL1
SANSUI
C15
C1
C2
C12
C13
C7
R9
R10
R11
R8
Q1
26 25 24
23 22 21 20
19 18 17 16

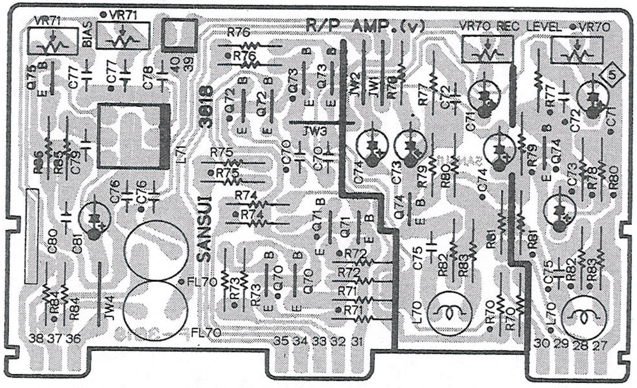
•Note: On this circuit board, the left channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
xQ1	46367101	2SC2603
	or 46391901	2SC2785
•IC		
xIC1	46128200	TA7629P
xC3	07215500	5600pF 25V C.C.
xC4	07216300	27000pF 25V C.C.
xC5	07215400	4700pF 25V C.C.
xC6	07216600	47000pF 25V C.C.
xFL1	46541500	Dolby Filter

4-3. F-3818 REC Amp. Circuit Board (Stock No. 00714401)

Component Side


VR71
BIAS
VR71
R76
R/P AMP.(v)
VR70 REC LEVEL
VR70
Q75
C77
C78
40
39
3818
Q72
Q73
JW2
JW1
R77
C71
C72
JW3
L71
R75
C70
C74
C73
R79
R80
Q74
R86
R85
C79
C76
R74
Q71
C80
C81
SANSUI
R72
C75
R82
R83
R81
FL70
R73
Q70
R71
L70
R70
R84
JW4
38 37 36
35 34 33 32 31
30 29 28 27

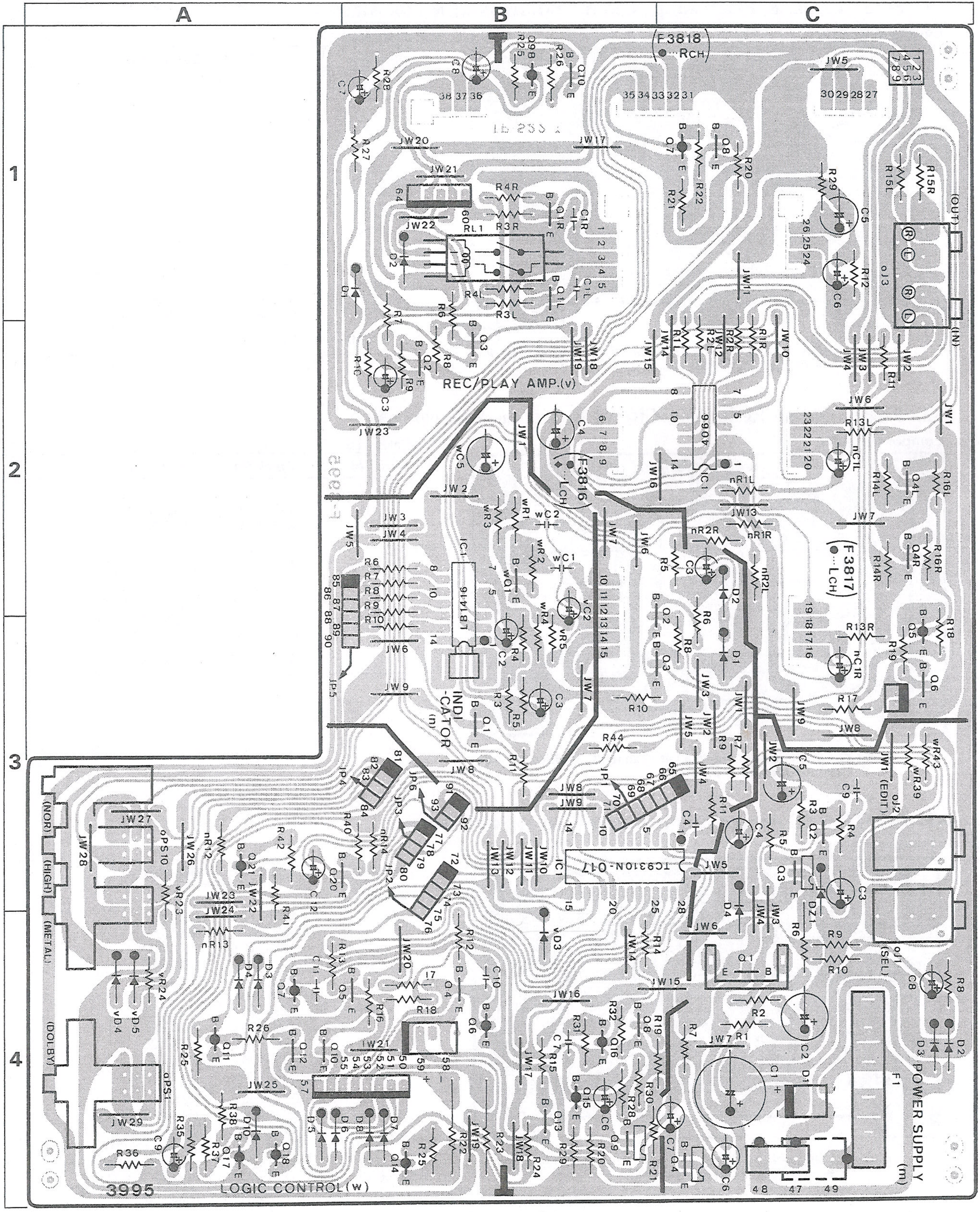
•Note: On this circuit board, the right channel is specified by "●" mark on top of the parts No.

Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ70	46367101	2SC2603
	or 46391901	2SC2785
vQ71	46367101	2SC2603
	or 46391901	2SC2785
vQ72	46367101	2SC2603
	or 46391901	2SC2785
vQ73	46367101	2SC2603
	or 46391901	2SC2785
vQ74	46367101	2SC2603
	or 46391901	2SC2785
vQ75	46362301	2SC1627A
vC70	07214800	1500pF 25V C.C.
vC72	07214800	1500pF 25V C.C.
vC75	07216300	27000pF 25V C.C.
vC78	00405200	0.0039μF 100V F.C.
vC79	07215400	4700pF 25V C.C.
vC80	07215400	4700pF 25V C.C.
vFL70	42904400	Trap Coil
vL70	46090500	Inductor 2.7mH
	or 46313900	Inductor 2.7mH
vL71	46362200	Bias OSC Coil
vVR70	07262100	50kΩ(B) SVR, REC level adj.
vVR71	07262200	100kΩ(B) SVR, BIAS level adj.

4-4. F-3995 Logic Control Circuit Board (Stock No. 00733401)

Component Side


A
B
C
1
2
3
4
F3818
RCH
REC/PLAY AMP.(v)
F3816
LCH
F3817
LCH
(OUT)
(IN)
INDI-CATOR (n)
TC9310N-017
(NOR)
(HIGH)
(METAL)
(DOLBY)
(EDIT)
(SEL)
POWER SUPPLY (m)
3995
LOGIC CONTROL(w)

Parts List

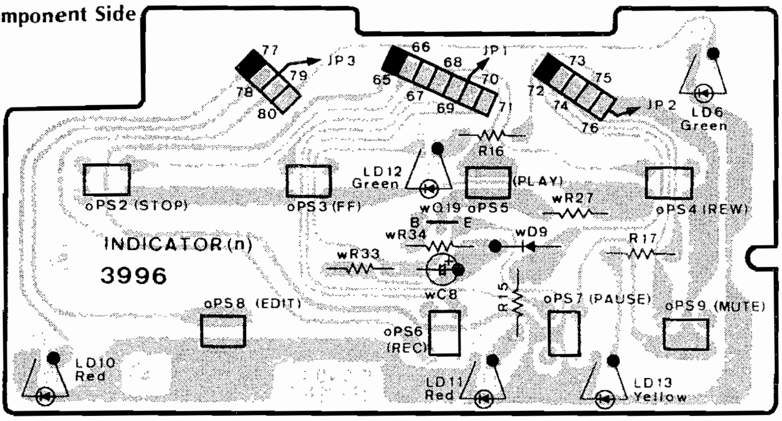
Parts No.	Stock No.	Description
•Transistor		
mQ1	07287101	2SD1147
mQ2	46367101	2SC2603
	or 46391901	2SC2785
mQ3	46501401	2SD1226
mQ4	46501401	2SD1226
•Diode		
mD1	46273600	DBB10-B
mD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
mD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
mD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
•Zener Diode		
mDZ1	46111500	05Z5.6-Y
mR6	46228600	47Ω 1/2W N.I.R.
mC9	07215800	10000pF 25V C.C.
•Transistor		
nQ1	46367101	2SC2603
	or 46391901	2SC2785
•IC		
nIC1	03611600	LB1416
oPS1	46549600	Push SW, DOLBY
oPS10	46564000	Push SW, TAPE SELECTOR
oJ1	46547200	COMPU SEL Jack
oJ2	46547200	COMPU EDIT Jack
oJ3	46371500	4P INPUT/OUTPUT Terminal
•Transistor		
vQ1	46367101	2SC2603
	or 46391901	2SC2785
vQ2	46367101	2SC2603
	or 46391901	2SC2785
vQ3	46367101	2SC2603
	or 46391901	2SC2785
vQ4	46367101	2SC2603
	or 46391901	2SC2785
vQ5	46367001	2SA1115
vQ6	46367101	2SC2603
	or 46391901	2SC2785
vQ7	46367001	2SA1115
	or 46392001	2SA1175
vQ8	46367101	2SC2603
	or 46391901	2SC2785
vQ9	46367001	2SA1115
	or 46392001	2SA1175
vQ10	46367101	2SC2603
	or 46391901	2SC2785
•IC		
vIC1	46421000	μPD4066BC
	or 07264600	MSM4066RS
•Diode		
vD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
vD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
vRL1	11504700	Relay

Parts No.	Stock No.	Description
•Transistor		
wQ1	46367101	2SC2603
	or 46391901	2SC2785
wQ2	46367101	2SC2603
	or 46391901	2SC2785
wQ3	46367101	2SC2603
	or 46391901	2SC2785
wQ4	46367101	2SC2603
	46391901	2SC2785
wQ5	46367101	2SC2603
	or 46391901	2SC2785
wQ6	46367001	2SA1115
	or 46392001	2SA1175
wQ7	46367001	2SA1115
	or 46392001	2SA1175
wQ8	46367101	2SC2603
	or 46391901	2SC2785
wQ9	46501401	2SD1226
wQ10	46359801	2SC2001
wQ11	46367001	2SA1115
	or 46392001	2SA1175
wQ12	46359801	2SC2001
wQ13	46367101	2SC2603
	or 46391901	2SC2785
wQ14	46359701	2SA952
wQ15	46367001	2SA1115
	or 46392001	2SA1175
wQ16	46367001	2SA1115
	or 46392001	2SA1175
wQ17	46367001	2SA1115
	or 46392001	2SA1175
wQ18	46367001	2SA1115
	or 46392001	2SA1175
wQ20	46367101	2SC2603
	or 46391901	2SC2785
wQ21	46367001	2SA1115
	or 46392001	2SA1175
•IC		
wIC1	46550100	TC9310N-017
•Diode		
wD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD6	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD7	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD10	03117600	1S1473T77
	or 46086000	1S1588TP-3
wR22	00185600	100Ω 2W N.I.R.
wR23	00191900	82Ω 2W N.I.R.
wC1	07216600	47000pF 25V C.C.
wC2	07216600	47000pF 25V C.C.
wC4	07215900	12000pF 25V C.C.
wC7	07216600	47000pF 25V C.C.
wC10	07215800	10000pF 25V C.C.
wC11	07215800	10000pF 25V C.C.

•Note: The circuit boards, F-3996, F-3994 & F-3997 are not supplied as the assembled, However, the individual parts on the circuit board are provided for orders.

4-5. F-3996 Input Switch Circuit Board

Component Side

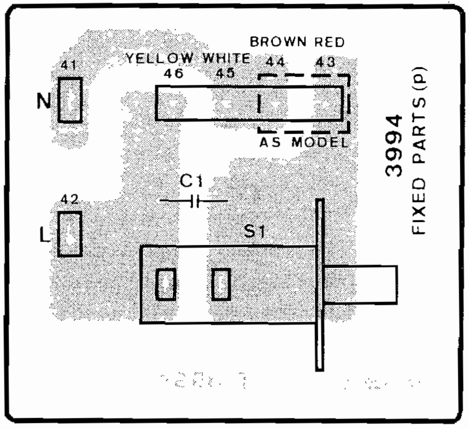

77
79
JP3
78
80
66
JP1
68
65
70
67
69
71
73
75
72
74
JP2
76
LD6
Green
R16
LD12
Green
(PLAY)
oPS2 (STOP)
oPS3 (FF)
wQ19 oPS5
B
E
wR27
oPS4 (REW)
INDICATOR(n)
3996
wR34
wD9
R17
wR33
wC8
R15
oPS7 (PAUSE)
oPS8 (EDIT)
oPS9 (MUTE)
oPS6
(REC)
LD10
Red
LD11
Red
LD13
Yellow

Parts List

Parts No.	Stock No.	Description
•LED		
nLD6	07250900	TLG123A
nLD10	46176900	TLS-123
nLD11	46176900	TLS-123
nLD12	07250900	TLG123A
nLD13	07251000	TLY123
oPS2	46133300	Push SW, STOP
oPS3	46133300	Push SW, FF
oPS4	46133300	Push SW, REW
oPS5	46133300	Push SW, PLAY
oPS6	46133300	Push SW, REC
oPS7	46133300	Push SW, PAUSE
oPS8	46133300	Push SW, REC MUTE
oPS9	46133300	Push SW, COMPU EDIT
•Transistor		
wQ19	46367101	2SC2603
	or 46391901	2SC2785
•Diode		
wD9	03117600	1S2473T77
	or 46086000	1S1588TP-3

4-6. F-3994 Power Supply Circuit Board

Component Side

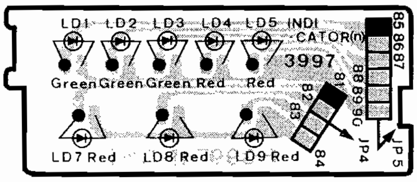

BROWN RED
YELLOW WHITE
41
44
43
46
45
N
AS MODEL
3994
FIXED PARTS (p)
C1
42
L
S1

Parts List

Parts No.	Stock No.	Description
pC1	46425800	10000pF 400V C.C.
pS1	46360300	Push SW, POWER

4-7. F-3997 Level Indicator Circuit Board

Component Side


LD1
LD2
LD3
LD4
LD5
INDICATOR(n)
3997
85
86
87
88
89
90
81
82
83
84
JP4
JP5
Green
Green
Green
Red
Red
LD7 Red
LD8 Red
LD9 Red

Parts List

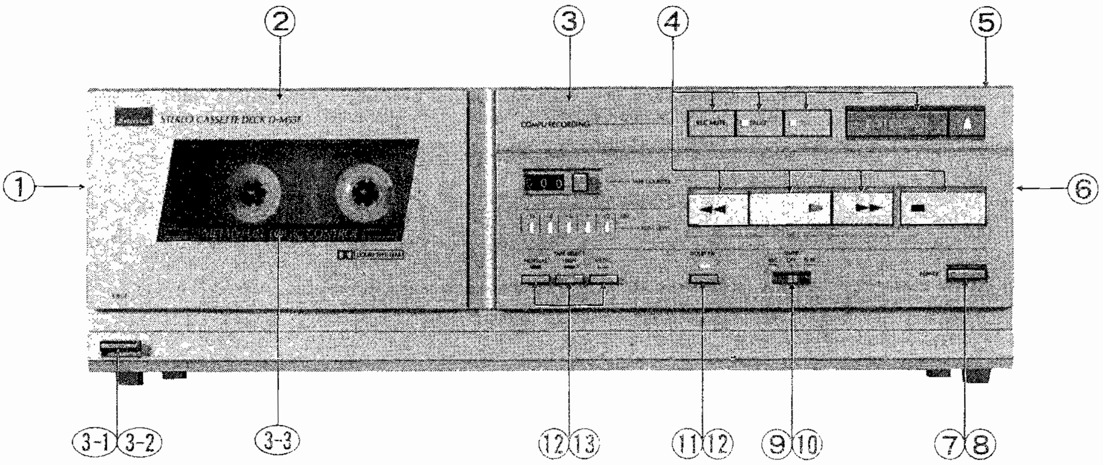
Parts No.	Stock No.	Description
•LED		
nLD1	07250900	TLG123A
nLD2	07250900	TLG123A
nLD3	07250900	TLG123A
nLD4	46176900	TLS-123
nLD5	46176900	TLS-123
nLD7	46176900	TLS-123
nLD8	46176900	TLS-123
nLD9	46176900	TLS-123

•Abbreviations

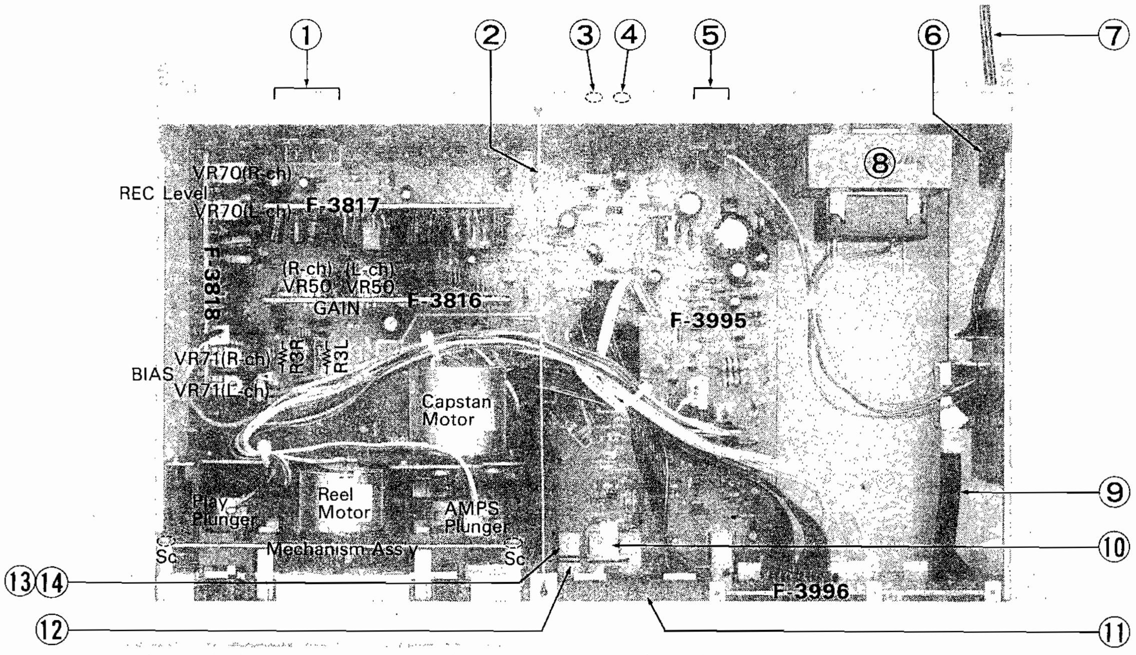
C.R. : Carbon Resistor
S.R. : Solid Resistor
Ce.R. : Cement Resistor
M.R. : Metal Film Resistor
F.R. : Fusing Resistor
N.I.R. : Non-Inflammable Resistor
C.C. : Ceramic Capacitor
C.T. : Ceramic Capacitor, Temperature Compensation
E.C. : Electrolytic Capacitor
E.L. : Low Leak Electrolytic Capacitor
E.B. : Bi-Polar Electrolytic Capacitor
E.BL. : Low Leak Bi-Polar Electrolytic Capacitor
Ta.C. : Tantalum Capacitor
F.C. : Film Capacitor
M.P. : Metalized Paper Capacitor
P.C. : Polystyrene Capacitor
G.C. : Gimmic Capacitor
V.R. : Variable Resistor
S.V.R. : Semi Variable Resistor
SW. : Switch

5. OTHER PARTS

5-1. Front View


②
③
④
⑤
①
⑥
(3-1)(3-2)
(3-3)
⑫⑬
⑪⑫
⑨⑩
⑦⑧

5-2. Top View


①
②
③
④
⑤
⑥
⑦
⑧
REC Level
VR70(R-ch)
VR70(L-ch)
F-3817
F-3818
(R-ch) (L-ch)
VR50 VR50
GAIN
F-3816
F-3995
BIAS
VR71(R-ch)
VR71(L-ch)
R3R
R3L
Capstan Motor
Reel Motor
Play Plunger
AMPS Plunger
Mechanism Ass'y
Sc
Sc
F-3996
⑨
⑩
⑬⑭
⑫
⑪

Parts List <Front View>

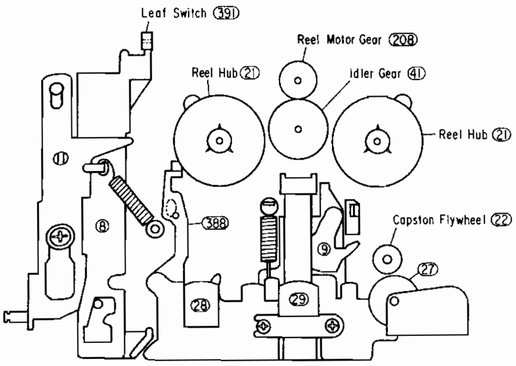
Parts No.	Stock No.	Description
1	47174800	Side Panel Ass'y (Left)
2	47182700	Cassette Lid Ass'y
3	47182600	Front Panel Ass'y
3-1	47171300	Eject Knob Holder
3-2	47165600	Eject Knob
3-3	07992310	Cassette Pocket Ass'y
4	46133300	Push SW, Control
5	47173000	Bonnet
6	47174900	Side Panel Ass'y (Right)
7	46360300	Push SW, POWER
8	47168800	Push SW Knob, POWER
9	46178400	Slide SW, TIMER
10	47189400	Knob, TIMER
11	46549600	Push SW, DOLBY
12	47209000	Push SW Knob
13	46564000	Push SW, TAPE SELECTOR

Parts List <Top View>

Parts No.	Stock No.	Description
1	46371500	4P Line Terminal
2		Tention Wire
3	46547200	Mini Pin Jack, COMPU EDIT
4	46547200	Mini Pin Jack, COMPU SELECTOR
5	46364900	AC Outlet
6	47157300	Cord Cover
7	38005400	Power Supply Cord
8	15011101	Power Transformer
9	47113100	Joint Shaft
10	47175000	Counter Holder
11	46604500	Tape Counter
12	47171400	Counter Belt
13	46370300	Eject Damper Ass'y
14	47167200	Damper Holder

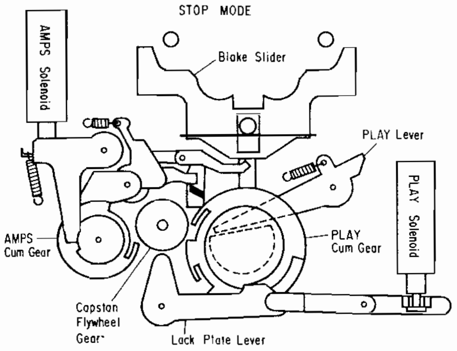
6. EXPLODED VIEW OF MECHANISM Ass'y & PARTS LIST

●Front View of Mechanism Ass'y

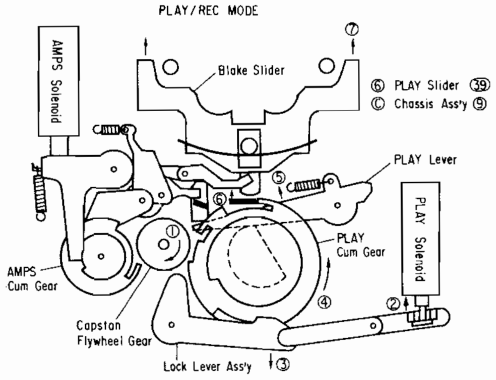

Leaf Switch (391)
Reel Motor Gear (208)
Reel Hub ㉑
Idler Gear ㊶
Reel Hub ㉑
(388)
Capston Flywheel ㉒
⑨
⑧
㉗
㉘
㉙

●Operation of Mechanism Ass'y

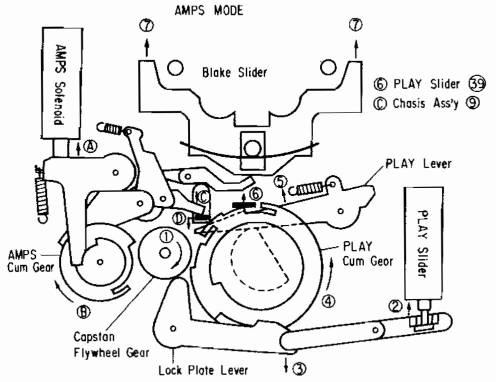
① STOP Operation


STOP MODE
AMPS Solenoid
Blake Slider
PLAY Lever
PLAY Solenoid
AMPS Cum Gear
PLAY Cum Gear
Capston Flywheel Gear
Lock Plate Lever

② PLAY/REC Operation


PLAY/REC MODE
AMPS Solenoid
Blake Slider
⑦
Ⓑ PLAY Slider ㊴
Ⓒ Chassis Ass'y ⑨
PLAY Lever
⑤
⑥
①
PLAY Cum Gear
PLAY Solenoid
AMPS Cum Gear
④
②
Capston Flywheel Gear
Lock Lever Ass'y
③

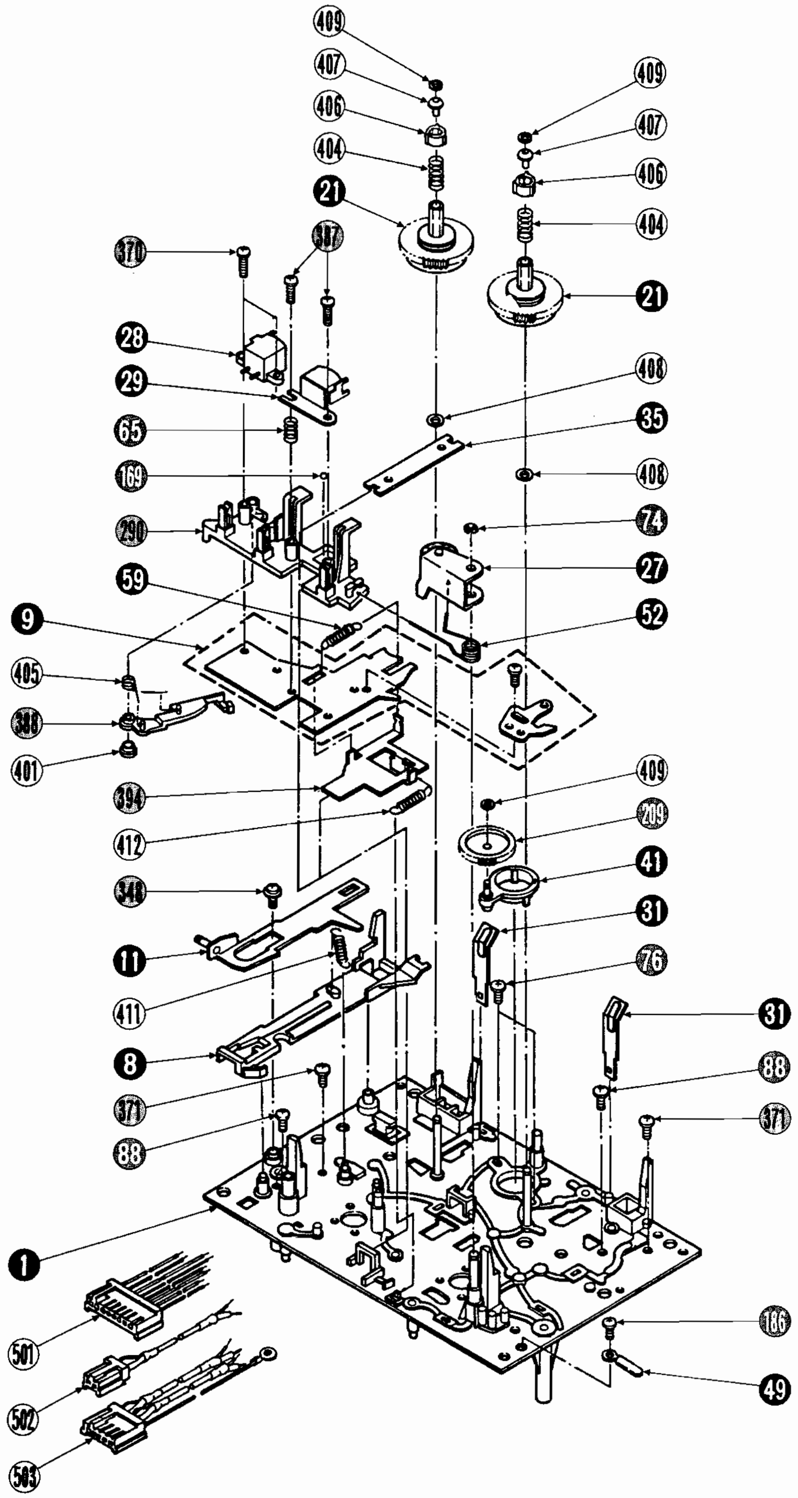
③ AMPS Operation


AMPS MODE
⑦
⑦
AMPS Solenoid
Blake Slider
Ⓑ PLAY Slider ㊴
Ⓒ Chosis Ass'y ⑨
Ⓐ
PLAY Lever
⑤
⑥
Ⓓ
①
PLAY Cum Gear
PLAY Slider
AMPS Cum Gear
Ⓑ
④
②
Capston Flywheel Gear
Lock Plate Lever
③

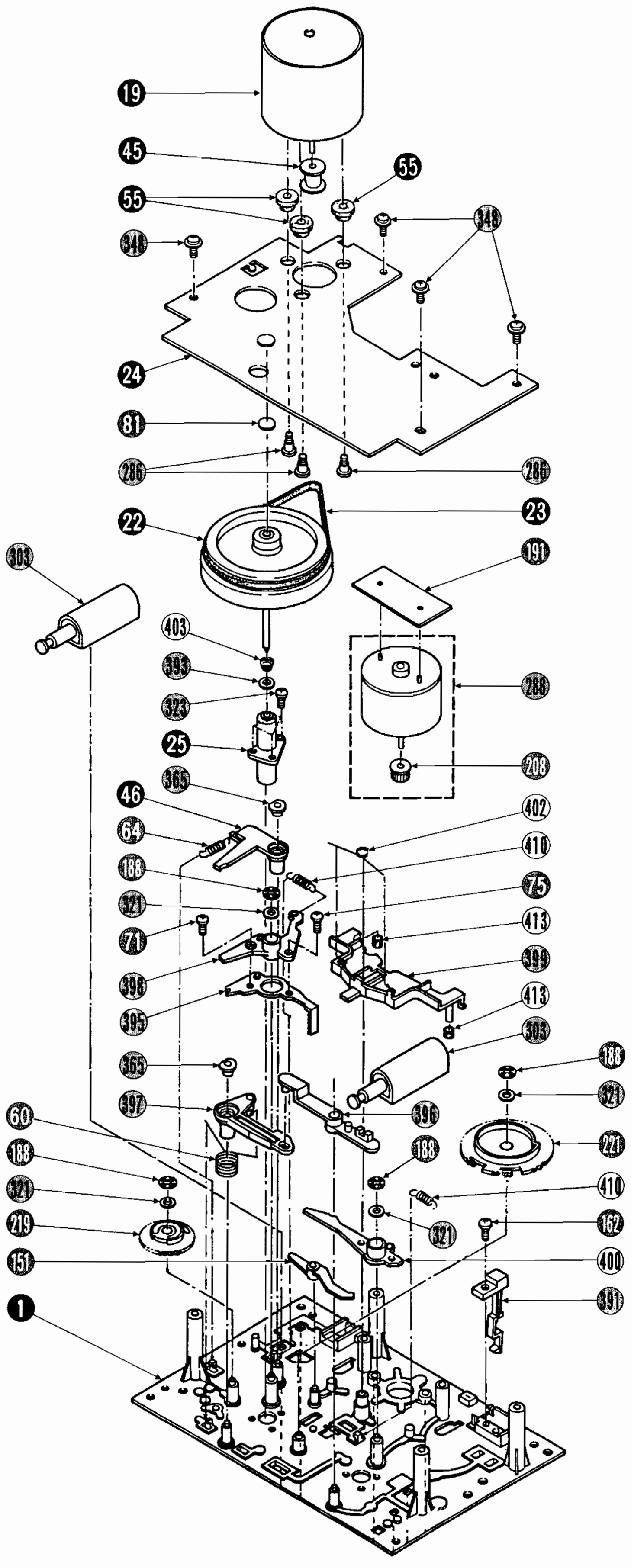
Parts List <6-1, 6-2>

Parts No.	Stock No.	Description
8	47014400	Slider Lock Plate
19	07721100	Capstan Motor
21	47014600	Reel Hub
22	47014700	Flywheel Ass'y (capstan)
23	47014800	Capstan Belt
27	47015000	Pinch Roller Ass'y
28	07997400	Erase Head
29	47162200	Rec/PB Head
31	47015100	Cassette Holder Spring
35	47015200	Slider Hold Plate Spring
41	47213600	Idler Gear Arm
45	47015400	Pulley, Capstan Motor
46	47015500	AMPS Lock Lever
52	47015600	Pinch Roller Spring
55	47015700	Cushion, Motor
59	47015800	Play Slider Plate Spring
60	47015900	Play Lock Lever Spring
64	47016000	AMPS Lock Lever Spring
65	47016100	Head Adjust Spring
71	07736400	Binding Head Screw M2.6 × 3
74	00489000	E ring d = 2.0
75	47016200	Binding Head Screw M2.6 × 5
76	00421400	Binding Head Screw M2.6 × 8
88	00421200	Binding Head Screw M2.6 × 4
151	47016300	Brake Lever
162	00440500	Pan Head Tapping Screw M2.6 × 8
169	09462700	Steel Ball d = 3.0
186	47016200	Binding Head Screw M2.6 × 5
188	51822900	CS Type Ring d = 3.0
209	47016500	Idler Gear
219	47016600	Cam Gear, AMPS
221	47016700	Cam Gear, Play
286	47016800	Special Screw M2.6 × 1
288	47016900	Reel Motor Ass'y (with Gear (208))
290	47017000	Head Base
303	47213500	Plunger Solenoid, Play•AMPS
321	00466400	Plain Washer d = 3.0
323	47017200	Binding Head Tapping Screw M2.6 × 3
348	47004600	Washer Head Tapping Screw M2.6 × 8
365	47017300	Bush
370	47017400	Binding Head Deltite Screw M2.0 × 14
371	00424700	Binding Head Screw M2.6 × 3
387	47017500	Binding Head Screw M2.0 × 13
388	47017600	Kick Lever Ass'y
391	47017700	Leaf Switch, rec prevention
393	47017800	Washer d = 2.5
396	47018000	Plunger Lever
397	47018100	Lock Plate Lever
398	47018200	AMPS Lever
399	47018300	Brake Slider
400	47018400	Play Lever
401	47018500	Spacer
402	47018600	Brake Spring
403	47018700	Flywheel Spring
404	47018800	Reel Spring
405	47018900	Kick Lever Spring
406	47019000	Reel Collar
407	47019100	Reel Cap
408	07513000	Thrust Washer d = 2.0
409	47019200	Thrust Washer d = 1.6
410	47019300	Play Lever Spring
411	47019400	Lock Slider Spring
412	47019500	Play Slider Spring
413	47019600	Cushion, Brake

6-1. Front View of Mechanism Chassis


409
407
406
404
21
370
387
28
29
65
169
290
59
9
405
388
401
394
412
348
11
411
8
371
88
1
501
502
503
409
407
406
404
21
408
35
408
74
27
52
409
209
41
31
76
31
88
371
186
49

6-2. Rear View of Mechanism Chassis


19
45
55
55
348
348
24
81
286
286
22
23
191
303
403
393
323
25
365
288
208
46
64
188
321
71
398
395
365
397
60
188
321
219
151
1
402
410
75
413
399
413
303
188
321
396
188
221
410
321
162
400
391

- Though every part included in mechanism ass'y is numbered in exploded view, part unlisted in the parts list are not supplied.

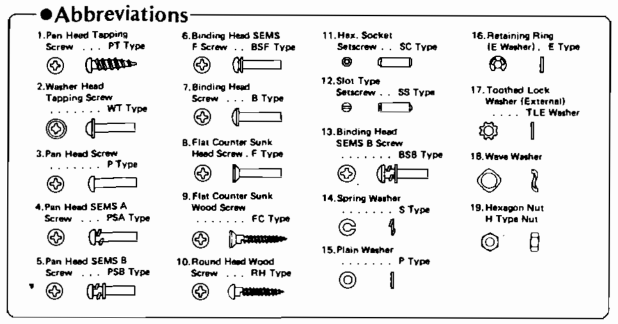
❶ ~ (59)

(60) ~ (229)

(230) ~ (399)

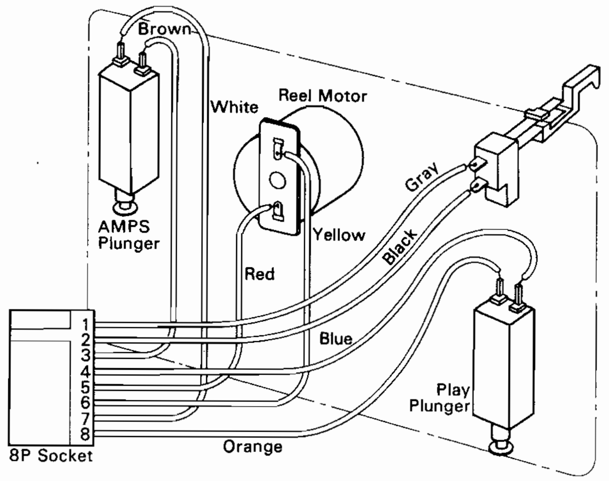
(400) ~ (503)

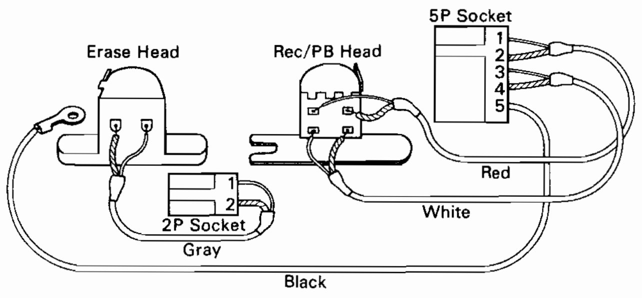
●Abbreviations



1. Pan Head Tapping Screw . . . PT Type
2. Washer Head Tapping Screw . . . . WT Type
3. Pan Head Screw . . . . P Type
4. Pan Head SEMS A Screw . . . PSA Type
5. Pan Head SEMS B Screw . . . PSB Type
6. Binding Head SEMS F Screw . . BSF Type
7. Binding Head Screw . . . B Type
8. Flat Counter Sunk Head Screw . F Type
9. Flat Counter Sunk Wood Screw . . . . FC Type
10. Round Head Wood Screw . . . RH Type
11. Hex. Socket Setscrew . . SC Type
12. Slot Type Setscrew . . SS Type
13. Binding Head SEMS B Screw . . . . BSB Type
14. Spring Washer . . . . S Type
15. Plain Washer . . . . P Type
16. Retaining Ring (E Washer), E Type
17. Toothed Lock Washer (External) . . . . TLE Washer
18. Wave Washer
19. Hexagon Nut H Type Nut

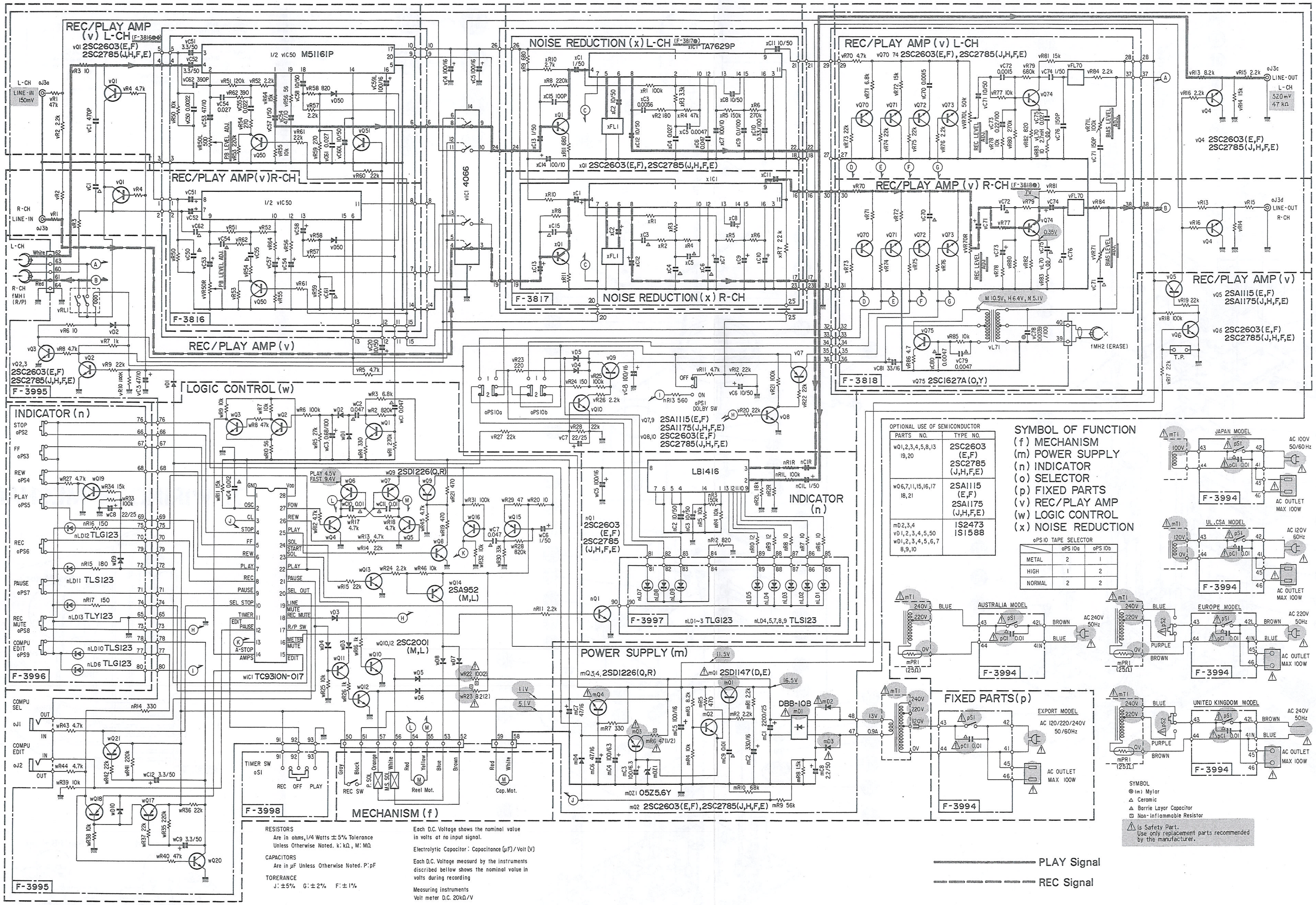
7. WIRING OF MECHANISM Ass'y


Brown
White
Reel Motor
Gray
AMPS Plunger
Yellow
Black
Red
Blue
1
2
3
4
5
6
7
8
8P Socket
Orange
Play Plunger


5P Socket
1
2
3
4
5
Erase Head
Rec/PB Head
Red
1
2
2P Socket
White
Gray
Black

8. SCHEMATIC DIAGRAM

*Design and specifications subject to change without notice for improvement.
*La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
*Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


REC/PLAY AMP (v) L-CH
REC/PLAY AMP(v)R-CH
REC/PLAY AMP (v)
NOISE REDUCTION (x) L-CH
NOISE REDUCTION (x) R-CH
REC/PLAY AMP (v) L-CH
REC/PLAY AMP (v) R-CH
REC/PLAY AMP (v)
LOGIC CONTROL (w)
INDICATOR (n)
INDICATOR (n)
POWER SUPPLY (m)
FIXED PARTS (p)
MECHANISM (f)
M51161P
TA7629P
LB1416
TC9310N-017
vIC1 4066
F-3816
F-3817
F-3818
F-3995
F-3996
F-3997
F-3998
F-3994
JAPAN MODEL
U.L.CSA MODEL
AUSTRALIA MODEL
EUROPE MODEL
UNITED KINGDOM MODEL
EXPORT MODEL
AC OUTLET MAX 100W
TIMER SW oS1
REC OFF PLAY
REC SW
Reel Mot.
Cap.Mot.

RESISTORS
Are in ohms, 1/4 Watts ±5% Tolerance
Unless Otherwise Noted. k: kΩ, M: MΩ

CAPACITORS
Are in µF Unless Otherwise Noted. P: pF

TORERANCE
J: ±5% G: ±2% F: ±1%

Each D.C. Voltage shows the nominal value in volts at no input signal.

Electrolytic Capacitor: Capacitance (µF) / Volt (V)

Each D.C. Voltage measurd by the instruments discribed bellow shows the nominal value in volts during recording

Measuring instruments
Volt meter D.C. 20kΩ/V

OPTIONAL USE OF SEMICONDUCTOR

PARTS NO.	TYPE NO.
wQ1,2,3,4,5,8,13 19,20	2SC2603 (E,F) 2SC2785 (J,H,F,E)
wQ6,7,11,15,16,17 18,21	2SA1115 (E,F) 2SA1175 (J,H,F,E)
mD2,3,4 vD1,2,3,4,5,50 wD1,2,3,4,5,6,7 8,9,10	1S2473 1S1588

SYMBOL OF FUNCTION
(f) MECHANISM
(m) POWER SUPPLY
(n) INDICATOR
(o) SELECTOR
(p) FIXED PARTS
(v) REC/PLAY AMP
(w) LOGIC CONTROL
(x) NOISE REDUCTION

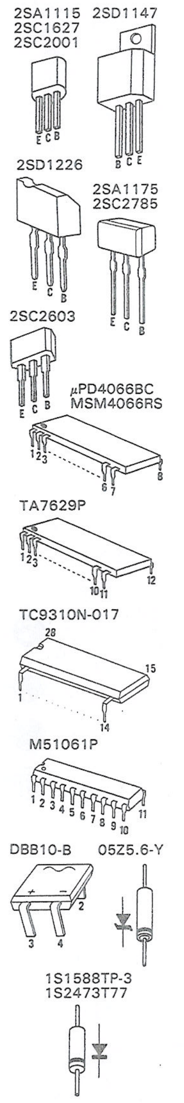
oPS10 TAPE SELECTOR

	oPS10a	oPS10b
METAL	2	1
HIGH	1	2
NORMAL	2	2

SYMBOL
◎ (m) Mylar
△ Ceramic
△ Barrie Layor Capacitor
⊡ Non-Inflammable Resistor

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.

———— PLAY Signal
— — — — REC Signal

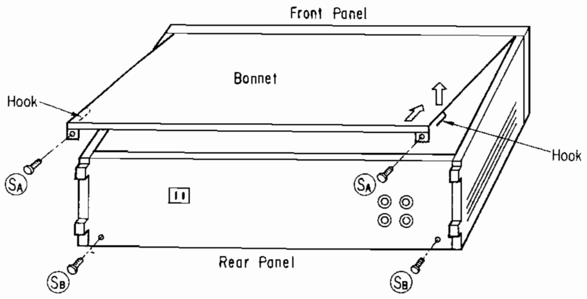

2SA1115 2SC1627 2SC2001
2SD1147
E C B
B C E
2SD1226
2SA1175 2SC2785
2SC2603
µPD4066BC MSM4066RS
TA7629P
TC9310N-017
M51061P
DBB10-B
05Z5.6-Y
1S1588TP-3 1S2473T77

9. MAIN PARTS REPLACEMENT (See Exploded of Mechanism Ass'y and Top View on page 10)

A. Bonnet (See Fig. 9-1)

1) Remove two screws (SA).
2) Push the rear side of the bonnet to remove the hooks and then remove bonnet.

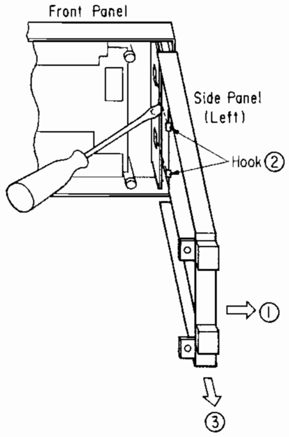
Fig. 9-1



B. Side Panel L (R) (See Fig. 9-1 & 9-2)

1) Remove the bonnet and two screws (SB).
2) Shift the position of the side panel L (R) 1.5 cm in the arrow direction.
3) Remove the hooks ② of the side panel from front panel and then pull it to the arrow direction ③ to remove the side panel L (R). (Fig. 9-2 ③)

Fig. 9-2



C. Mechanism assembly

(See Top View on Page 10)

1) Remove the bonnet and both side panels.
2) Remove four screws (SC) fixing mechanism assembly.
3) Pull out the mechanism assembly from the rear panel side.

D. Reel Motor (288)

1) Pull out the mechanism assembly from the rear panel side.
2) Remove two screws (76) fastening reel motor and idler gear arm ㊶.
3) Pull out reel motor from the back side.

E. Idler Gear (209)

1) Pull out the mechanism assembly from the rear panel side.
2) Remove the washer (409), retaining the idler gear.
3) Remove the idler gear from the idler gear arm.

F. Reel Hub ㉑ Cushion (brake) (413)

1) Pull out the mechanism assembly from the rear panel side.
2) Remove the thrust washer (409) reel cap (407), reel collar (406) and reel spring (404) and pull out the reel hub.
3) Extract the cushion (brake) from the brake slider.

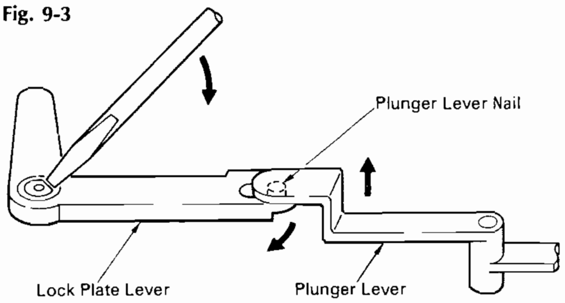
G. Capstan Motor ⑲, Flywheel ㉒

1) Pull out the mechanism assembly from the rear panel side.
2) Remove four screws (348) fixing the capstan motor mounting plate.
3) Remove three screws (286) fastening capstan motor.
4) Remove the capstan motor.
5) Pull out the flywheel from mechanism assembly.

H. Play Cam Gear (221) (See Fig. 9-3)

1) Perform the same manner as for the flywheel.
2) Remove the bush (365) fastening the lock plate lever (397).
3) Take out the plunger lever nail from the lock plate lever.
4) Remove the lock plate lever.
5) Remove the CS type ring (188) retaining the play cam gear.
6) Take out the plain washer (321) and extract the play cam gear.

Fig. 9-3

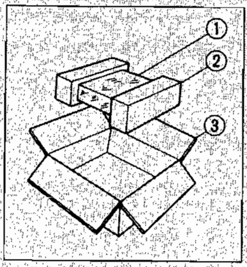


I. AMPS Cam Gear (219)

1) Perform the same manner as for the flywheel.
2) Remove the AMPS lock lever spring (64) from the AMPS lock lever ㊻.
3) Remove the bush (365) fasting AMPS lock lever and take out the AMPS lock lever.
4) Remove the CS type ring (188) fasting AMPS cam gear.
5) Remove the plain washer (321) and extract the AMPS cam gear.

10. PACKING LIST

Parts No.	Stock No.	Description
1	09453300	Vinyl Bag
2	47187600	Styrofoam Packing
3	47187400	Carton Case



11. ACCESSORY LIST

Stock No.	Description
07193400	Pin Plug Cord
or 38103300	Pin Plug Cord
46267300	Mini Pin Plug Cord
or 46410000	Mini Pin Plug Cord
94300500	Head Cleaner
46557800	Operating Instruction

Sansui
SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
333 West Alondra Blvd. Gardena, California 90247 U.S.A.
3036 Koapaka St. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.: Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany

(SM1-96) Printed in Japan (630320M) <Stock No. 36482000>